CHANNEL

SAFETY SYSTEMS

VERITAS 2

4 wire conventional fire alarm system from Channel Safety Systems

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INSTALLATION & USER INSTRUCTIONS

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DESCRIPTION OF THE SYSTEM

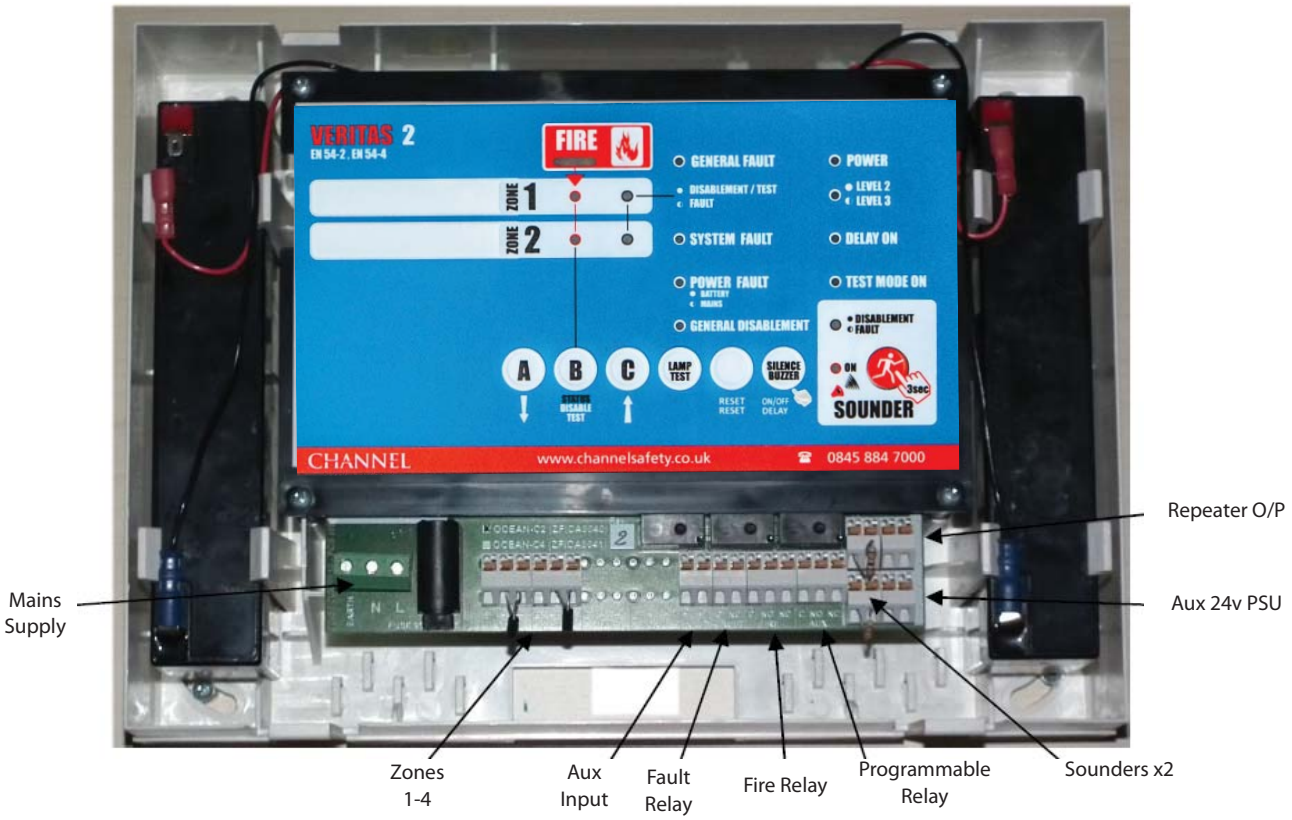
The Veritas 2 two & four zone control panels are compact EN54-2 conventional fire alarm control panels with an integrated EN54-4 power supply system.

Technical Data

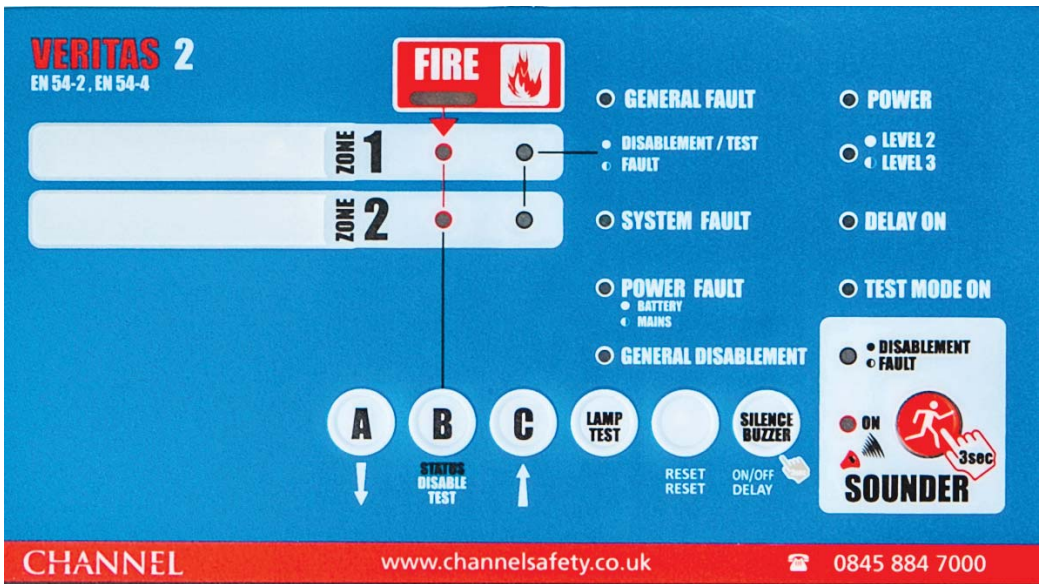
Power Supply Specifications:	
Main supply	230VAC -15% +10% - 50/60Hz
Secondary supply	2 x 12v batteries 2.1 to 2.3 Ah
Mains protection	1A time-lag fuse
Secondary protection	1A PolySwitch PPTC
Minimum current	24 mA
Maximum current	1.0 A
Rated voltage	28.5 V
Battery disconnection/ Load-limiting device	21.5 V +/- 10%
Final voltage battery	21 V +/- 10%
Panel Quiescent load	30mA
Charger Specifications:	
Voltage stability (temperature controlled)	27.3VDC at 20°C
Zones (2 or 4)	
Zone voltage	21V +l- 2%
Number of points per zone	32 maximum per line
End of line unit	10uF/50v Bi-Polar Capacitor
Zone Alarm current	Limited to 100mA
Zone fault current	6mA
Max zone wiring	1,000 meters (1.5mm) / 120 ohms
Relays, Inputs & Outputs	
Fire Relay	Change over contacts rated at 24v 3A
Fault Relay	Normally Closed relay rated at 24v 3A
Programmable Relay	Change over contacts rated at 24v 3A
Auxiliary 24vDC supply	Maximum 100mA at 24 V
Repeater Panel	Maximum 4 repeaters (1000m total wiring)
Programmable Input	Requires normally open input to select.
Sounder Circuits	2 circuits each rated at 24V 500mA
End of Line Unit	1N4004 400mA Diode
Dimensions & Weights	
Dimensions	370mm(W) x 295mm(H) x 90mm(D)
Weight (with batteries)	2.8Kg
Access Codes	
Level 2 User Code **AABC**	**Level 2 LED Illuminates** (used for everyday operation)
Level 3 User Code **AACC**	**Level 3 LED flashes** (used for 'end user' programming)

INTERNAL & EXTERNAL VIEW

Internal View



External Keypad



INDICATORS

Indicator	Colour	State	Indicates
Power	Green	On	System On
Level 2/3	Yellow	On	Access code 2 entered
		Flashing	Access code 3 entered
Delay Active	Yellow	On	Delays activated
Sounder Disabled/ Fault	Yellow	Flashing	Sounder fault
		On	Disabled
General Fault	Yellow	On	Fault
System Fault	Yellow	On	Internal fault
Power Fault	Yellow	On	Battery fault
		Flashing	Mains fail
General Disablement	Yellow	On	Disablement on system
Fire	Red	On	Panel in alarm condition
Zone - Fire	Red	On	Zone in alarm
		Flashing	Pre alarm mode
Zone - Fault	Yellow	On	Fault detected on zone
Test Mode On	Yellow	On	System on test

Buzzer Operation

Pulsing sound: a fault has been detected.

Continuous sound: an alarm has been operated by:-

- An automatic detector
- A manual fire alarm activation
- An evacuation manual control

1 beep: = key pressed
5 beeps: = validation of programming

Configuration Programming Modes

Indicator	Colour	State		Indicates
Zone	Red	Pressing button B	Flashing	Mode A pre alarm
		Pressing button B	On	Mode B double knock
General Disablement	Yellow	Pressing lamp test	Off	Aux relay not linked to zones
		Pressing lamp test	On	Aux relay linked to chosen zones
General Fault	Yellow	Pressing reset button	Off	Aux o/p set to continuous on system reset
		Pressing reset button	On	Aux o/p set to short break on system reset
Level 2/3	Yellow	Pressing silence button	On	Programmable I/P set to Reset
Delay LED	Yellow	Pressing silence button	On	Programmable I/P activates delay
Test Mode	Yellow	Pressing silence button	On	Programmable I/P class change
Disablement/Fault	Yellow	Pressing silence button	On	Programmable I/P isolate sounders

BUTTON OPERATION

Keys	Access Level	Duration of Press	Functions
A	2/3	Short Long	Scroll selection Change Access Level
B	1	Continuous	Enter Diagnostics mode
B	2	Short	Activate selected mode. Toggle & Validate selection
B	3	Short	Activate selected mode. Toggle & Validate Test mode
C	2/3	Short	Scroll selection
Lamp Test	1/2/3	Continuous	Test LEDs & buzzer
Reset	2/3	Short	Reset System
Silence Buzzer	1/2/3	Short	Silence buzzer
	2	Long (3 seconds)	Enable delays
Sounder	1	Long (3 seconds)	Enable delays
	2	Short	Silence or re-sound sounders

ACCESS LEVELS

Access levels enable trained personnel to operate the panel at the appropriate level.

Access Codes & programming Modes

Access Level	User Type
1	Available to all
2	Trained users, able to silence & reset
3	Trained users, able to silence, reset & test the system
CONFIG	Engineers level, used to programme the control panel and set up special functions

Level 2 User Code **- AABC** **Level 2 LED Illuminates**

Level3 User Code **- AACC** **Level 3 LED flashes**

To enter programming modes:

CONFIG With panel depowered, switch hold A & C, apply power & hold for 5 seconds. Buzzer will confirm by beeping 5 times.

CONFIG OUPUT Once in the CONFIG mode press red Sounder button. Red 'sounder on' LED illuminates

STAND BY BATTERY CALCULATION

The capacity of the standby batteries in the fire alarm panel once the mains has failed depends on the quiescent load of the panel, the alarm load on the panel.

To determine the capacity of batteries required for any given stand-by period, this formula should be used:-

Standby Time in Ahr = 1.25 x ((TxA) + H x (P+Z))
The multiplier 1.25 is present to account for lost capacity over the life of the batteries.

H = Number of hours standby required

P = The quiescent current of the Panel = 0.030A
This figure is with the Mains failed, buzzer operating and the Power Supply and General Fault indicators lit. If there other quiescent loads are taken from the panel these should be added.

Z = The total quiescent current of all zone devices
As a guideline, the quiescent current of most modern detectors is typically 0.00005A (50µA), and that of manual call points is zero. To obtain accurate figures please contact the manufacturer or Channel Safety Systems.

A = The total alarm current on the sounder circuits

T = The amount of time in hours required for the sounder circuits to operate (usually 30 mins (0.5)).

Example
The panel has 70 detectors each consuming 50uA each, 20 Sounders at 20mA each, the required standby time is 24 Hours, and the required alarm time is 0.5 Hours.

Z = 70 x 0.00005 = 0.0035A
P = 0.030A
A = 20 x 0.02 = 0.4A
H = 24
T = 0.5

Standby Time in Ahr = 1.25 x ((0.5 x 0.4) + 24 x (0.030 + 0.0035)) = 1.1AHr
Therefore, batteries with at least 1.1Ahr capacity are required.

INSTALLATION

Overall dimensions 370mm(W) x 296mm(H) x 90mm(D)
Cable entry is via 20mm conduit knockouts
Fix the main control panel to a fixed surface using the 4 slots in the corners of the back box.

Terminals

Set of Terminals	Use	Specification
T1	Mains Supply	230Vac 50Hz – 1A time-lag fuse
T2 T3 T4* T5*	**Zones** Zone 1 Zone 2 Zone 3 Zone 4	21VDC 32 devices max per zone Cable 1.5mm 2 core + earth fire resistant type Max length 1000m EOL Device 10uF/50v Bipolar capacitor
T6	Programmable Input	
T7	Fault Relay	Normally closed – 3A 24V
T8	Fire Relay	Change over - 3A 24V
T9	Programmable Relay	Change over - 3A 24V
T10 T11	Sounder Circuit 1 Sounder Circuit 2	24v 500mA Max - EOL Device 1N4004 diode 24v 500mA Max - EOL Device 1N4004 diode
T12	Aux 24v DC supply	24VDC 100mA Max
T13	Repeater outputs	

The « E » terminal is provided for the screen connection.
Connect the wiring to the appropriate terminals. Note the terminal blocks are removable
Ensure the polarity is correct (+/-)
Ensure that termination within ancillary devices is correct.

* 4 zone panel only

MAINS SUPPLY

Cable types and limitations

Consult Clause 26 of BS 5839: Pt 1: 2002 Fire Detection and Alarm Systems for Buildings (Code of Practice for System Design, Installation, Commissioning and Maintenance) for detailed information on cables, wiring and other interconnections.
To comply with EMC (Electro Magnetic Compatibility) regulations and to reduce the risk of electrical interference in the system wiring, fire-resistant screened cables must be used throughout the installation. Correct use of cable glands is essential.

Mains Supply

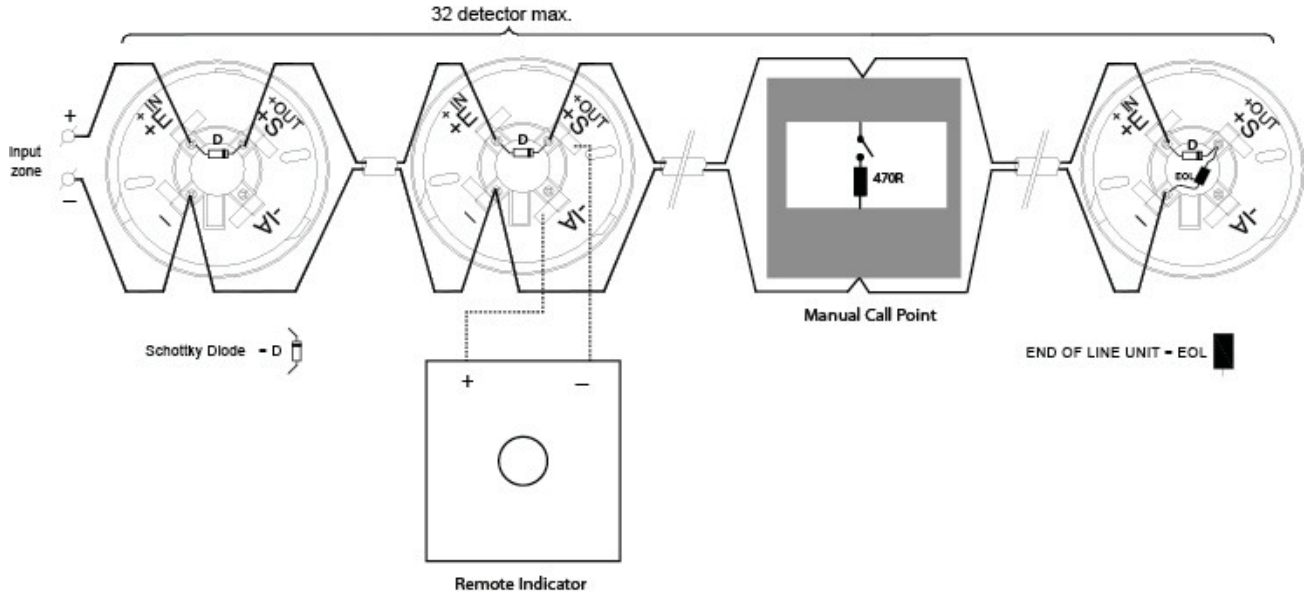
The requirement for the mains supply to the fire alarm panel is fixed wiring, using three core cable (Minimum dia 1.5mm2) or a suitable three conductor system, fed from an isolating switched fused spur, fused at 3A. This should be secure from unauthorised operation and be marked **'FIRE ALARM: DO NOT SWITCH OFF'** The mains supply must be exclusive to the fire panel. (As an alternative to a switched fused spur, a double pole isolating device may be used

Battery Specification

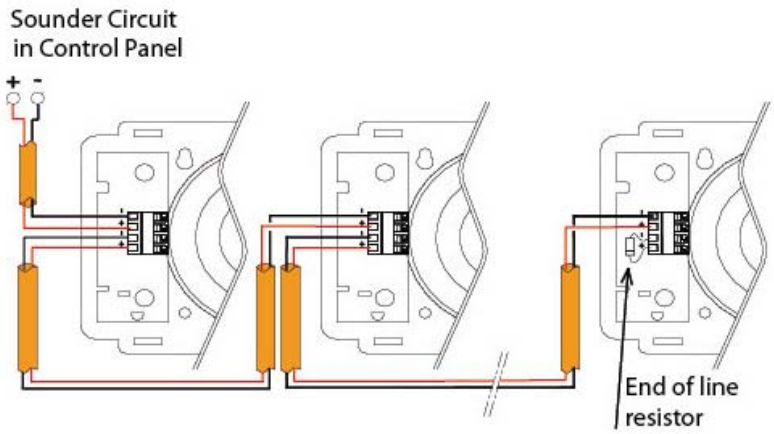
Battery: 2x 12V capacity: 2.1 Ah
Protection: 1A Polyswitch

Ensure battery polarity is correct
Battery charging time: 24 hours when first installed or from total discharge

ZONE WIRING



Sounder Circuit wiring



SYSTEM PROGRAMMING

Access Codes

Level 2 User Code **AABC Level 2 LED Illuminates**
Level 3 User Code **AACC Level 3 LED flashes**

Most systems will not require any special programming

There are two programming menus, CONFIG & CONFIG OUTPUTS.

To access the **CONFIG** mode, with panel depowered, switch hold down the A & C buttons, apply power & hold for 5 seconds. Buzzer will confirm by beeping 5 times.

Once in the CONFIG mode you can access the **CONFIG OUTPUTS** menu by pressing the red sounder button.

To quit the CONFIG level, press simultaneously the A and C keys until the validation buzzer sounds.

The programming system consists of:-

- Selecting the mode to ALARM condition, either immediate (default) or by type A or B
- Allocating the auxiliary relay to the ALARM condition in one or more zones
- Selecting the programmable input operating mode
- Selecting the **auxiliary** 24VDC supply mode
- Selecting the delay by zone (if any)
- Adjusting the delay time from 1 to 10 minutes
- Activate resound buzzer on new alarm

Alarm Mode

The default setting is as per BS5839 pt1 2002.
Please note the following optional modes are a variation to the requirements of BS5839 pt1 2002

Type A - Pre- Alarm Mode gives the following function:-

Activation of any device on a zone will immediately start a 30 second timer, no sounders or relays will activate. Any subsequent alarms within the first 30 seconds will be ignored.
After 30 seconds, if the initiating detector remains in the fire condition or another device on the same zone activates then a full evacuation will take place.
The pre-alarm time is limited to two minutes. If an alarm is initiated after two minutes (from first initiation) the process starts again.
If a second alarm is not received within two minutes the control panel remains in the 'normal' state.

This mode is used to reduce unwanted alarms, typically in HMO's.

Type B – Double Knock mode gives the following function:-
Activation of any device on a zone will immediately indicate the appropriate zone on the control panel and start the panel buzzer, no sounders or relays will activate.
To initiate a full alarm activation the second paired zone must also be triggered.
The zones are paired as zone 1 & 2, and zone 3 & 4
Sounders and relays are only initiated on activation of the second zone.

PROGRAMMING

All programming uses the following instructions

To enter CONFIG mode, with panel depowered, switch hold down the A & C buttons, apply power & hold for 5 seconds. Buzzer will confirm by beeping 5 times

Use button 'A' & 'C' to select the required zone (A up, C down)

The zone fault LED indicates which zone is being programmed

Once in the CONFIG mode you can access the CONFIG OUTPUTS menu by pressing the red sounder button.

To quit the CONFIG level, press simultaneously the A and C keys until the validation buzzer sounds

Mode Selection

Use button 'B' to select the mode
The zone fire LED indicates the selection.

- Off is **DEFAULT**
- Flashing is **Mode A**
- Steady is **Mode B**

Programmable Auxiliary Relay

This relay can be linked to none, all or chosen zones.
In CONFIG mode.
Use 'Lamp Test' button to select on or off
The General Disablement LED indicates the selection.

- Off is not linked (default)
- On is linked
- If 'class change' input is selected then the link will be OFF

Auxiliary 24v PSU output

This output can be set to continuous or short break when the system is Reset. In CONFIG mode.
Use 'Reset' button to select continuous or break The General Fault LED indicates the selection.

- Off is continuous (default)
- On is 'break'

PROGRAMMING

Programmable Input

This input can be set to, Reset or Activate delay or Class change or Isolate sounders.
In CONFIG mode.
Use 'Silence Buzzer' button to select chosen function.

Level 2/3	LED Reset
Delay LED	Activate Delay
Test Mode LED	Class Change
Disablement/Fault LED	Isolate Sounders
No indication	No action

Delay Sounders and Relays by Zone

Sounders and auxiliary relays can be delayed between 1-10 minutes. Each zone can be set to enable the delay. The chosen time is applied to all selected zones. Once the panel has been programmed the user can select to activate the delay or disable the delay.

Setting the zones to be delayed.

To enter **CONFIG** mode, with panel depowered, switch hold down the A & C buttons, apply power & hold for 5 seconds. Buzzer will confirm by beeping 5 times. Enter **CONFIG OUTPUTS** mode by pressing the red Sounder button. Red 'sounder on' LED illuminates.

Use button 'A' & 'C' to select the required zone (A up, C down). The zone fault LED indicates which zone is being programmed. Use button B to select if the chosen zone it to be delayed. Red zone LED on shows that the zone is delayed.

Setting the delay time.

When in the CONFIG OUTPUTS mode (see above) Once in the CONFIG mode illuminates.

Use the **'Silence Buzzer'** button to select the time delay. Each press will increment the delay by 1 minute. The flashing **'Disablement/Fault'** LED shows the selected time in minutes. (5 flashes = 5 minutes).

To save the settings, exit the CONFIG/CONFIG OUTPUTS mode by pressing the A and C keys simultaneously until the validation buzzer sounds (5 seconds).

The selected delay is activated by entering user level 2.

To deactivate the delay, enter level 2 User Code, **AABC** Level 2 LED Illuminates.
Press **'Silence Buzzer'** button for 3 seconds. Delay LED extinguishes.

USER INSTRUCTIONS

In the event of the alarm being triggered you must carry out the fire procedure as required for the premises.

Once the cause of the alarm has been investigated & when safe to do so carry out the following actions.

The appropriate red FIRE LED(s) will be lit to indicate which area(s) of the building are affected. The LED on the initiating detector or break glass will be illuminated.

To silence the sounders

Enter user code **AABC** - Level 2/3 LED illuminates continuously
Press the Red Sounder button

To silence the buzzer

Press Silence Buzzer button

To reset the system

Enter user code AABC (if not already entered) - Level 2/3 LED illuminates continuously
Press Reset Button
Level 2/3 LED extinguishes

Silence or restart sounders

To operate all the sounders without the need to activate a break glass call point, or to restart them if they have been silenced.
Enter user code **AABC** - Level 2/3 LED illuminates continuously
Press red Sounder button for 3 seconds

Evacuate

Press red sounder button for 3 seconds
All sounders will activate.
Auxiliary relays are not activated

Fault

The appropriate Fault LED(s) will be illuminated. Please note which ones are lit before proceeding.

To silence the buzzer

Press the Silence buzzer button

USER INSTRUCTIONS

Reset

To reset the system
Enter user code **AABC** (if not already entered) - Level 2/3 LED illuminates continuously
Press Reset Button
Level 2/3 LED extinguishes
If the fault has not been corrected the panel will indicate fault again.

If you can not correct the fault please call Channel Safety Systems on 0845 884 7000.

Weekly Test ('One man test')

To select zones for test
Enter level 3 user code AACC Level 2/3 LED flashes
Zone 1 red fire LED is illuminated
Press button B to select mode. Test Mode LED illuminated shows zone is in 'one man test'
Use button 'A' & 'C' to select the required zone (A up, C down)
Press button B to select mode. Test Mode LED illuminated shows zone is in 'one man test'
Repeat for all required zones
Press Reset to save selection
When a device is triggered on a zone in the test mode, the sounders will operate for 0.5 seconds
The panel will automatically reset and will not allow further testing for 18 seconds.

To reactivate zones following 'One Man Test'

Enter level 3 user code AACC Level 2/3 LED flashes
Zone 1 red fire LED is illuminated
Press button B to select mode. Test Mode LED illuminated shows zone is in 'one man test'
Use button 'A' & 'C' to select the required zone (A up, C down)
Press button B to select mode. Test Mode LED extinguished shows zone is not in 'one man test'
Repeat for all required zones
Press Reset to save selection

Isolate a zone

Beware! Isolated zones will not activate the panel.
Enter user code **AABC** - Level 2/3 LED illuminates continuously.
Press button B, red fire LED flashes
Use button 'A' & 'C' to select the required zone (A up, C down)
The zone fault LED indicates which zone is being programmed
Press button B to isolate the zone. General Disablement LED illuminates continuously.
Repeat for all required zones.
Save selection by pressing RESET

USER INSTRUCTIONS

Reactivate a zone following 'Isolation'

Enter user code **AABC** - Level 2/3 LED illuminates continuously.
Press button B, red fire LED flashes
Use button 'A' & 'C' to select the required zone (A up, C down)
The zone fault LED indicates which zone is being programmed
Press button B to reactivate the zone. General Disablement LED extinguishes.
Repeat for all required zones.
Save selection by pressing RESET

Activate/Deactivate Delays

Enter user code **AABC** - Level 2/3 LED illuminates continuously.
Press 'Silence Buzzer' for 3 seconds – Delay on LED illuminates.
To Deactivate repeat above process

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